E. Van Noorden Company.

Skylights,
Ventilators
AND Sheet Metal
Work.

B

E. Van Noorden Company,

BOSTON.

Skylights and Ventilators

Copper Work for Buildings.

ROOFING, GUTTERS, CONDUCTORS, SHINGLES,
CORRUGATED IRON FOR ROOFS AND SIDING,
LIGHT IRON BUILDINGS and ROOFS,
METAL WINDOWS.

944 Massachusetts Avenue,

BOSTON, MASS.

SKYLIGHTS.

CONSTRUCTION.

Our skylights are made of galvanized sheet iron or sheet copper. The method of construction is simple, but involves two important principles namely, great strength and lightness. This fact alone makes them superior to both wrought-iron and wooden lights; superior to the former, inasmuch as there is no expansion or contraction of parts to break the glass or make leaks, there being a comparatively small body of metal used in the construction of bar and frame of skylights to be acted on by heat or cold. In wrought-iron skylights, the breakage of glass by contraction of the metal is a common matter of complaint, and constitutes a great objection to their use. The straining and opening of joints, thereby occasioning leaks, caused by this action in wrought-iron lights, is unknown in our skylights.

In our skylights, provision is made for carrying off the condensation from the inside, and preventing leaks, matters which cannot be well guarded against in wrought-iron skylights.

These skylights are superior to wooden lights, as they are fireproof, more durable, do not leak, are condensation-proof, are lighter in weight, and, being less clumsy, admit more light.

Figures 1 and 2 represent sections through skylight bar. These bars are made of sheets of metal, bent up by machine into the shape shown. By this peculiar form is secured a hollow bar, combining the maximum of strength with the minimum of weight. The bar is provided with a gutter, to conduct the drip, or condensation from under side of glass. No dripping of condensed water, as in other skylights. The drip runs along the gutter down the bar to the main gutter at the base of the skylight, and is thence conducted outside on the roof. We make various sizes of bar to suit the span or

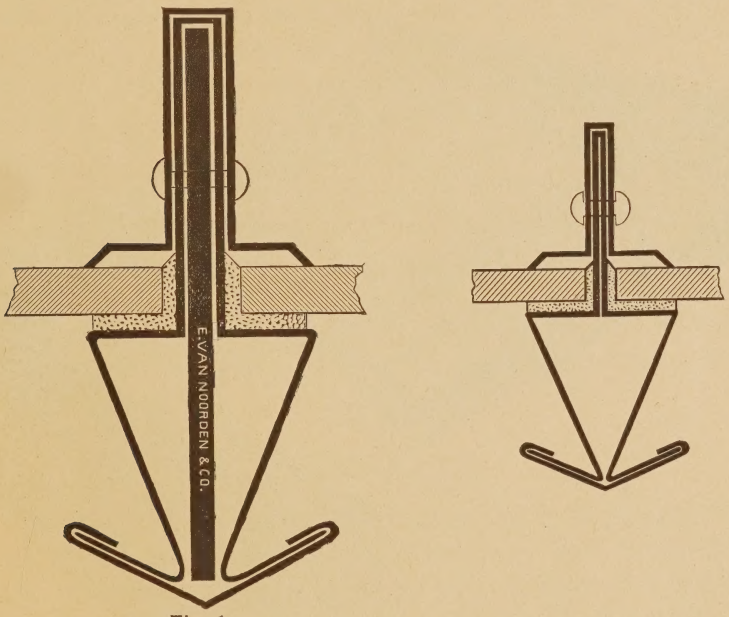


Fig. 1.

opening. The glass is bedded on rabbet of bar with putty, which is used merely for a bed, and not to perform the office required of it in other skylights. A metal cap, as shown, is placed astride the bar, lapping over the glass, and hugging the metal, and is firmly attached thereto. (We make another form of cap, which is not illustrated.) Figure 1 shows our regular bar with a heavy central core plate, and is used for large spans. Modifications of this bar are made by increasing its depth and varying the thickness of core plate. Without the core plate, figure 1 would show our standard bar for ordinary spans.

Figure 2 is our small bar used for small spans.

Figure 3 shows a portion of our skylight in position and fastened to the curb, also showing sections of the different parts.

A, section of ridge bar and cap.

B, cross clip, which is used in large skylights where more than one length of glass must be used, the edges of glass being protected, and leakage prevented by means of a cross gutter which conducts the water (either condensation or from the outside) into the gutters on skylight bars.

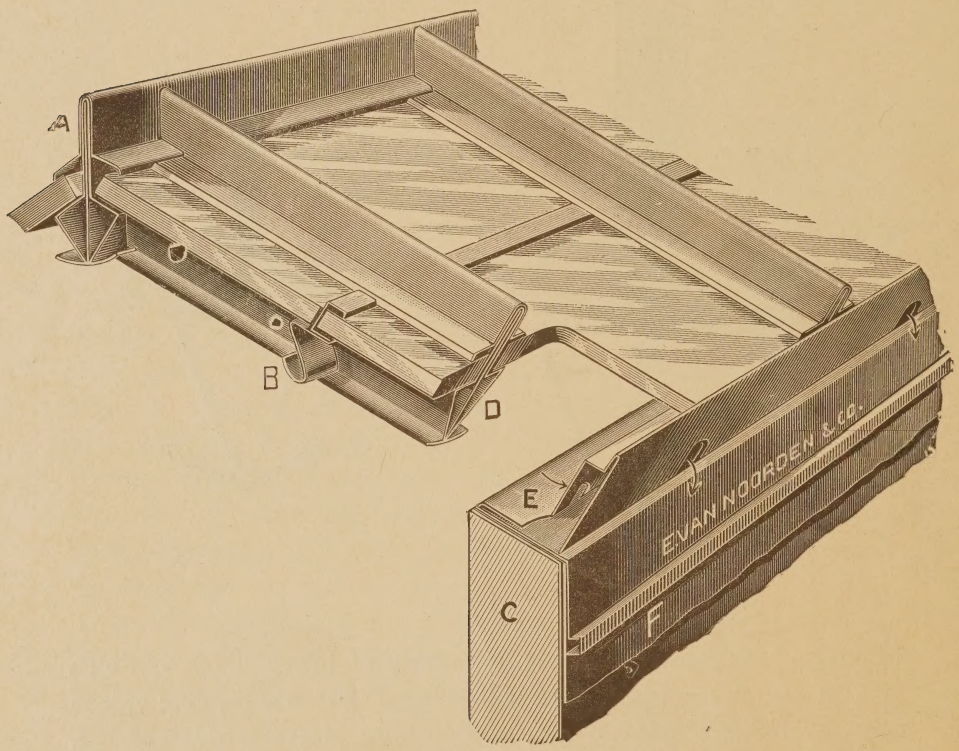


Fig. 3.

C, curb, generally of wood, covered by the roofer with suitable flashing, and to which the skylight is securely fastened.

D, skylight bar, showing glass and cap in place.

E, base of frame, which is made double, with openings to allow condensation to escape to outside of skylights, at same time preventing storm beating in, the holes not being opposite.

F, roof flashing.

PITCH OF SKYLIGHT.

In Single-Pitch Skylights the pitch should not be less than five inches to the foot. In Double-Pitch or hipped skylights we raise to a pitch equalling one-third the width of the opening, which makes an angle of 33 1-3 degrees, or 8 inches to the foot. For instance, in a skylight spanning 9 feet, the rise is 3 feet.

CURBS.

The curbings for our skylights are usually of wood, and are furnished and set in place by the carpenter or owner, and flashed to the inner edge by the roofer, with tin, zinc, or copper. Our measurements are always taken on the outside of curb; we make all the allowances necessary for play and flashing. Therefore in building curbs, the carpenter should always work to exact figures. For instance, for a 6 by 8 skylight, he should build his curb 6 by 8 feet, measuring on the outside of curb. The curb should be built of 2-inch plank, level on top, and at least 6 inches above the roof on low side. For spans exceeding 10 feet, the curbs should be 3 inches thick, and bevelled on top to a pitch of 8 inches per foot, which is the same pitch we give our skylights. This applies to curbs on flat roofs.

FIRE-PROOF.

Our lights are made of galvanized iron or copper, thoroughly riveted, and then well fluxed with solder, and are fire-proof. In all skylights where solid rafters are employed, there is liability of derangement through expansion by heat. By using a hollow bar of proper form, we obtain great strength, without much weight and without danger from expansion.

In view of this peculiarity of our skylights, they are universally regarded by fire underwriters as among the best.

EXPANSION AND CONTRACTION.

The advantage of our lights as regards expansion and contraction is an important feature, as, from the arrangement of rafters and other parts, the action of the metal does not conflict with the glass, which remains absolutely perfect in every extremity of weather.

GLAZING.

When double-thick glass is used, the horizontal joints are made by lapping. In using rough glass, one-quarter inch thick or thicker, the ends are butted, and the cross clip used as shown.

The glass is bedded on the rabbet of rafter with putty. This is used merely to form a level bed.

SIZE OF GLASS.

In glazing with double-thick or common window glass, we usually use sheets 12 to 20 inches wide by 30 to 36 inches long. With 3-16 inch rough, and thicker glass, the sheets are 15 to 24 inches wide.

WEIGHT OF ROUGH GLASS PER SQUARE FOOT.

Thickness, inches	1/8	3/16	1/4	3/8	1/2	5/8	3/4	1
Weight, pounds	2	2 1/2	3 1/2	5	7	8 1/2	10	12 1/2

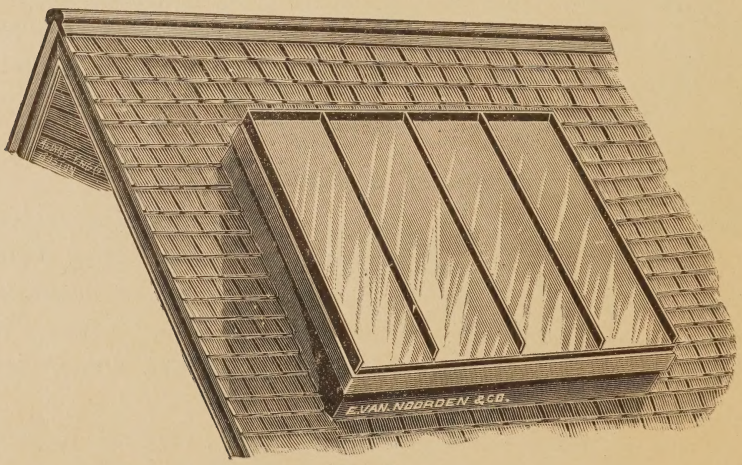


Fig. 5.

Figure 5 illustrates a Single-Pitch Skylight for a steep roof, and is made to set on a curb pitching same as roof, which is flashed over in the ordinary way. Ventilation is arranged in these lights by means of opening sashes, or in small lights, the whole light can be made to lift, as shown in figure 8.

Figure 6 illustrates a gable or Double-Pitch Skylight without ventilation. When span is 4 feet or wider, ends should be of wood, and pitch one-third; or, in other words, peak of gable should be one-third of span higher than low side. For instance, skylight 9 feet span, peak should be 3 feet higher than sides. See figure 17 and description of same.

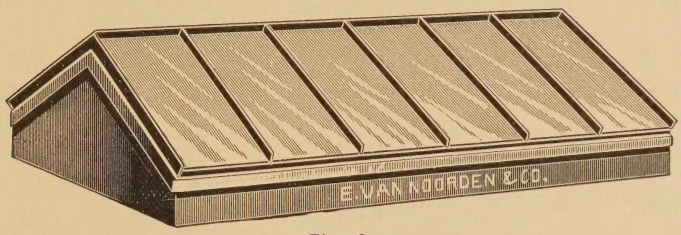


Fig. 6.

Figure 7 illustrates a Hip Skylight without ventilation. Curbs should be level.

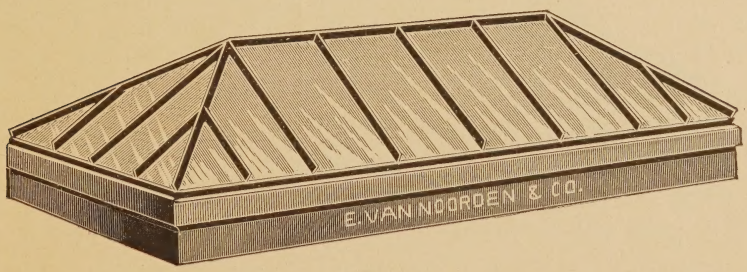


Fig. 7.

PRICE LIST OF SKYLIGHTS.

Glazed with 1-4 Inch Ribbed or Rough Plate Glass.

SIZE IN FEET.	Figure 5.	Figure 6.	Figure 7.
2 x 2	$10 00	$12 00	$16 00
2 x 2½	12 50	15 00	17 00
2 x 3	15 75	18 00	20 00
2 x 4	20 00	22 00	23 00
3 x 3	22 00	26 00	27 00
3 x 4	24 00	30 00	33 00
3 x 5	30 00	35 00	38 00
3 x 6	36 00	40 00	46 00
3 x 8	42 00	50 00	55 00
4 x 4	32 00	37 00	40 00
4 x 5	38 00	43 00	48 00
4 x 6	42 00	50 00	55 00
4 x 8	52 80	60 00	65 00
5 x 5	43 80	52 00	58 00
5 x 6	48 75	57 00	61 00
5 x 8	60 00	68 00	80 80
5 x 10	74 00	82 00	100 00
6 x 6	54 00	63 00	75 00
6 x 8	70 00	78 00	95 00
6 x 10	78 00	90 00	110 00
6 x 12	94 00	105 00	135 00
8 x 8	83 00	96 00	118 00
8 x 10	104 00	115 00	150 00
8 x 12	125 00	135 00	180 00
8 x 14	145 00	157 00	200 00
10 x 12	156 00	170 00	212 00
10 x 14	182 00	200 00	250 00

Discounts from lists.....

These price lists apply only to figures 5, 6, and 7, glazing with ¼-inch glass and putting up on buildings in Boston, or boxed f. o. b. cars or boat.

There are so many conditions to vary skylight work, that it is better to apply to us direct, stating size, styles, number, and where they are to be erected, and get exact figures. We invite correspondence, and will answer promptly all inquiries.

Figure 8 illustrates a Single-Pitch Skylight, the pitch being formed in the curb. This skylight is arranged to open as shown, and can be

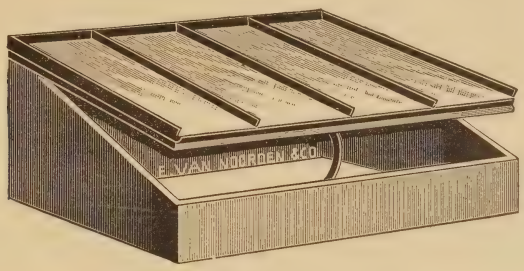


Fig. 8.

fastened at any desired angle by means of proper fixtures. This method of ventilation is advisable only in small skylights.

Fig. 9.

Figure 9 illustrates a Single-Pitch Skylight, the pitch being formed in the curb. It can be ventilated as shown by our Clover Leaf Ventilators, one in each end, or Louvre ventilators in the back or

curb (see figure 10) showing the wooden curb with openings for vents. Curb should not be less than 2 inches thick, and pitch not less than 5 inches to the foot, unless skylight is small, when pitch may be less.

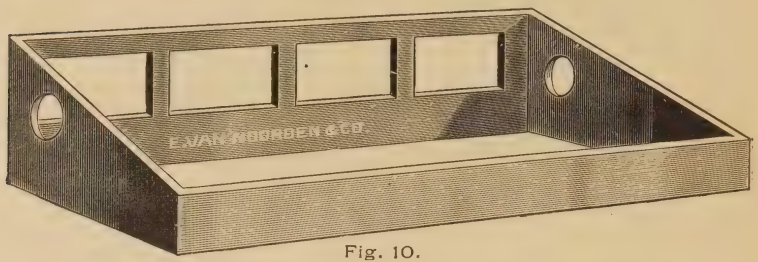


Fig. 10.

Figure 12 illustrates a Single-Pitch Skylight with back flashed securely into wall as shown, and ventilated by a Clover Leaf Ventilator in each end. Louvre Ventilators can be substituted. Pitch should not be less than 5 inches to the foot, and formed in curb. Small skylights may have less pitch.

Fig. 12.

Figure 13 illustrates a Single-Pitch Skylight set on a level curb, the pitch being formed in the skylight. It is ventilated by a continuous Ridge Ventilator provided with damper, worked by cords from below, and is recommended where much ventilation is wanted.

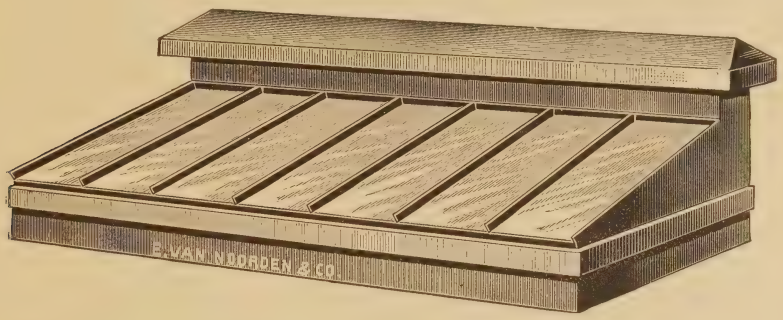


Fig. 13.

Figure 16 illustrates a Double-Pitch Skylight with a Louvre Ventilator in each end. The curb is level, pitch being formed in skylight. For spans wider than 4 feet, it is advisable to have the ends of wood, as shown in figure 17. Our Clover Leaf Ventilator may be

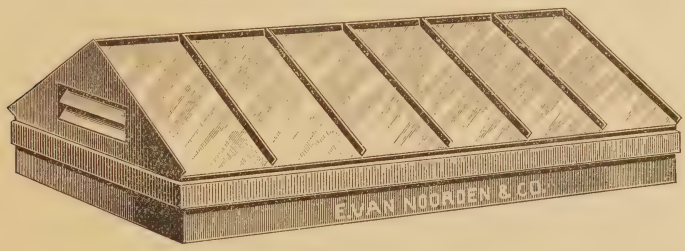


Fig. 16.

applied if desired. Where ends are of wood, the pitch should be 8 inches per foot, or, in other words, the peak should rise one-third of the span. For instance, in a skylight 9 feet wide, the apex of the triangular end should be 3 feet higher than its base.

Fig. 17.

Figure 18 illustrates a Double-Pitch Skylight with sash to open, as shown. Skylights wider than 4 feet, the ends should be of wood, pitched as described in figure 17.

Fig. 18.

Figure 19 illustrates a Double-Pitch Skylight with Clover Leaf Ventilator in one end. One end of skylight butts against a wall, and is securely flashed. Other styles of ventilators may be used. Ends of curb should be of wood if span is greater than 4 feet, hole being provided for ventilator.

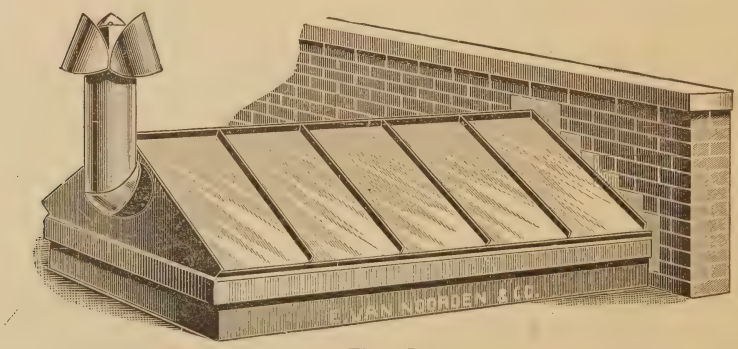


Fig. 19.

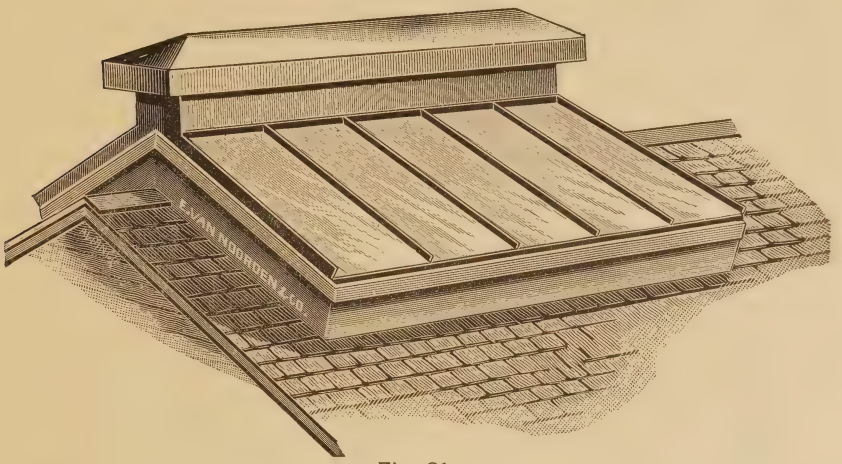


Fig. 21.

Figure 21 illustrates a Ridge Skylight with continuous Ridge Ventilator. It has the same pitch as roof, the curb being built parallel with same, and the lower side setting at right angles with roof.

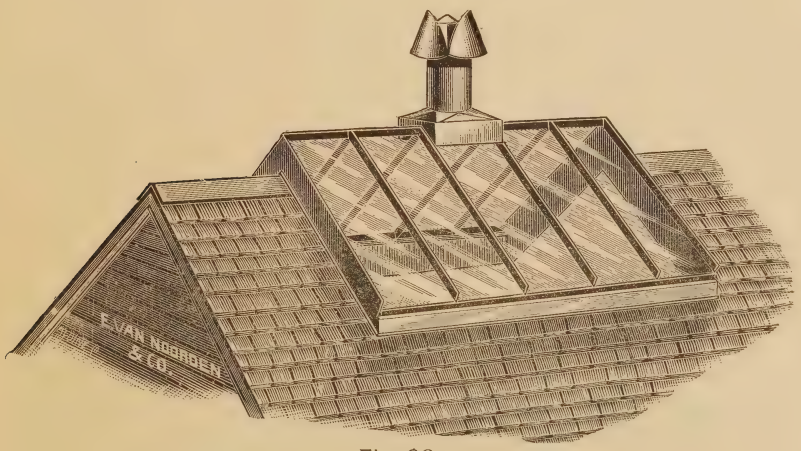


Fig. 22.

Figure 22 illustrates a Ridge Skylight, and is very similar to figure 21, except style of ventilator, which in this case is our Clover Leaf, instead of ridge ventilator.

Figure 23 illustrates a Hip Skylight, ventilated with two Clover Leaf Ventilators, curb in all cases being level. All measures for skylights should be on outside of curb.

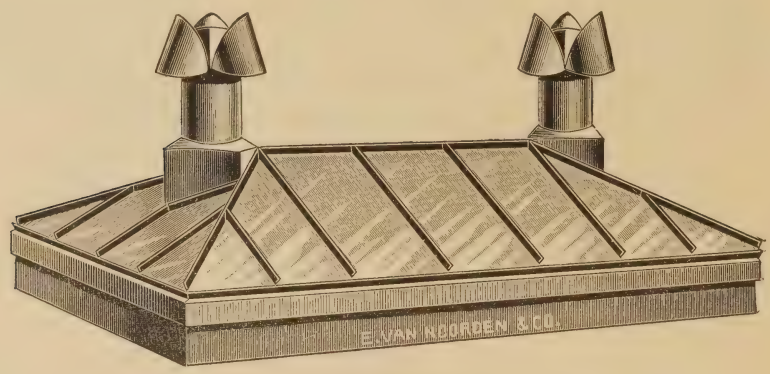


Fig. 23.

Figure 24 illustrates the same style of skylight as figure 23, with the exception that only one end is hipped, the other butting against the wall, and is securely flashed as shown.

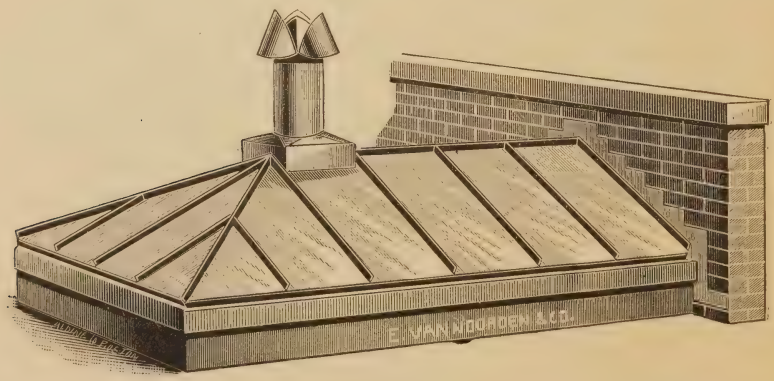


Fig. 24.

Figure 25 illustrates a Hip Skylight with continuous Ridge Ventilator.

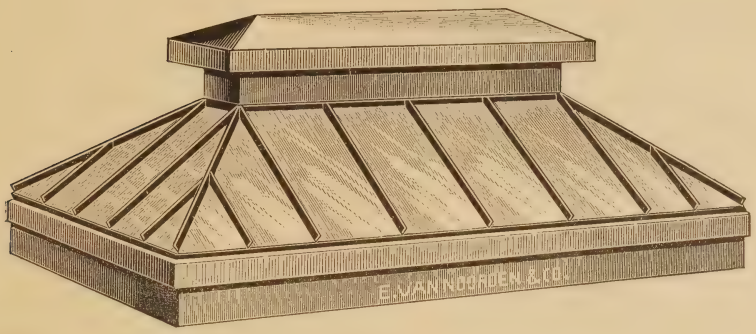


Fig. 25.

Figure 28 illustrates a plain Hip Skylight, which sets on a high wooden curb, covered in the usual manner with tin by the roofer, and Louvre Ventilators are inserted, as shown. These Louvres are provided with a flanged frame, the upper part of which extends up under the base or lower portion of skylights frame, making a secure flashing. Louvres may be stationary or movable, as desired. This form is adapted for breweries, foundries and stables.

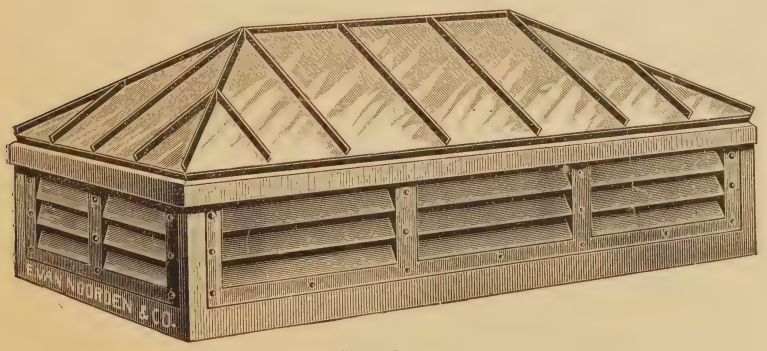


Fig. 28.

Figure 29 illustrates the wooden curb as arranged for Louvre Ventilators, as shown in figure 28.

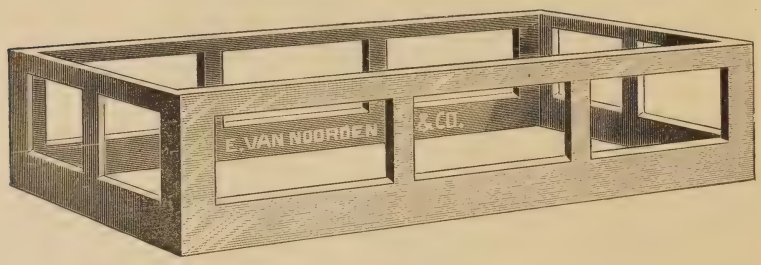


Fig. 29.

Figure 31 illustrates a Hip Monitor Skylight with glazed opening sash for ventilation. These sashes can be operated simultaneously by means of our self-locking apparatus described later in this catalogue. The cut shows gutter and conductor. This style skylight and ventilator is used chiefly for large openings over stores and work-shops, where much ventilation is desired without obstruction of light.

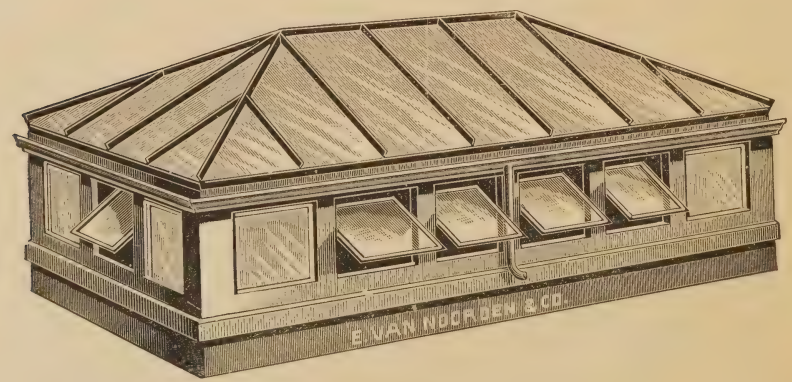


Fig. 31.

Figures 33 and 34 show two forms of stationary Metalic Louvres or Slat Ventilators used in connection with the skylights herein described, being applied to the curbs. They are shown partly in section and partly in perspective.

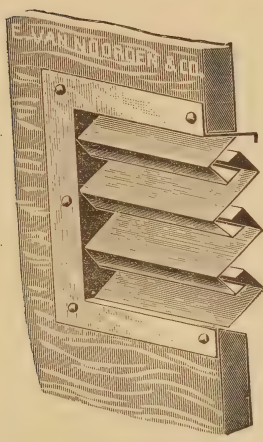


Fig. 33.

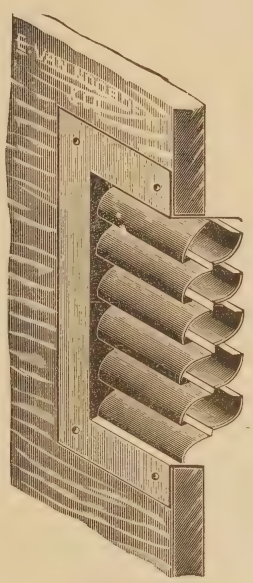


Fig. 34.

Figure 35 shows the movable Louvre Ventilator. 35A is a vertical section showing the slats closed, and 35B shows the slats open. They are operated by the quadrants attached to the upright bar, which in turn is pulled up or down by cords worked from below.

Fig. 35A.

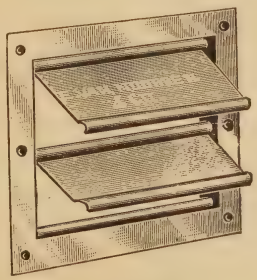


Fig. 35.

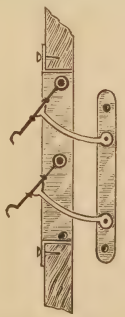


Fig. 35B.

SELF-LOCKING VENTILATING APPARATUS.

There is no better method of raising the sashes in skylights, greenhouses, graperies, etc., than is shown by the accompanying illustrations, and the facility by which long lines of sashes can be raised by

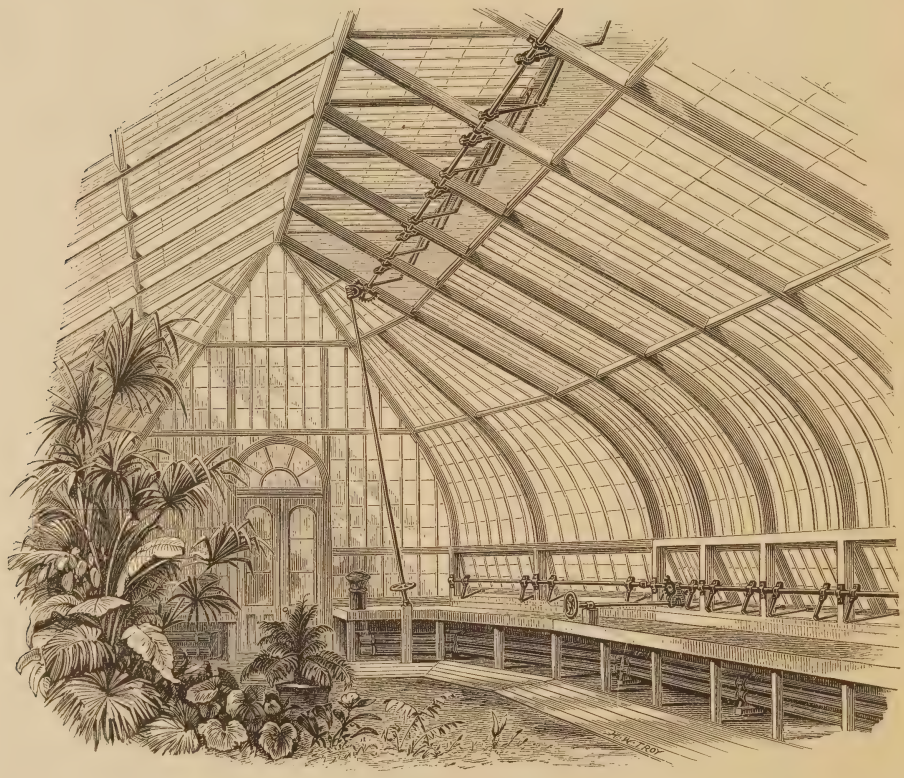


Fig. 36.

turning a crank or wheel, fastening them in any desired position, so that they cannot be disturbed by any sudden storm. The sashes can be left at any point with perfect safety, and cannot be moved without turning the crank or wheel on the hand shaft.

Parties wishing estimates will please give the size and number of sashes to be lifted, size and number of rafters, and length of house.

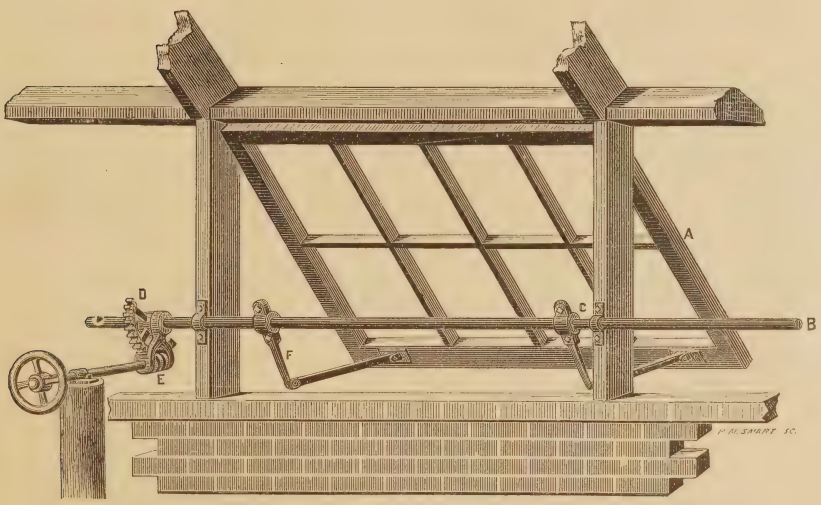


Fig. 38.

Figure 38 is a side view of sash. A, shows the sash partly raised. B, shows end of main shaft. C, the binder that fastens main shaft to upright or rafter. D, quadrant wheel attached to main shaft. E, the worm wheel geared in connection with the quadrant, D, and communicating motion to the whole shaft. F, the arm connected with hinge joint to wrought-iron strap, that may be placed in any position the sash may require.

Figure 42 shows a greenhouse, with ventilating sashes along the roof and also at the side.

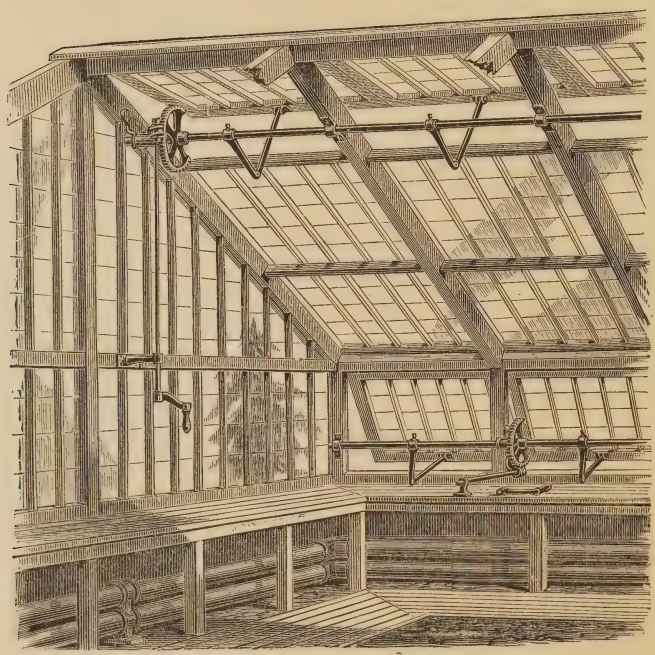


Fig. 42.

Figure 44 illustrates aStraight Extension Light at the rear of a store. The upper side and ends are flashed into the brick work and pointed with water-proof cement ; the lower side rests on the rear wall, to which it is effectually secured and anchored. It is provided with a moulded gutter.

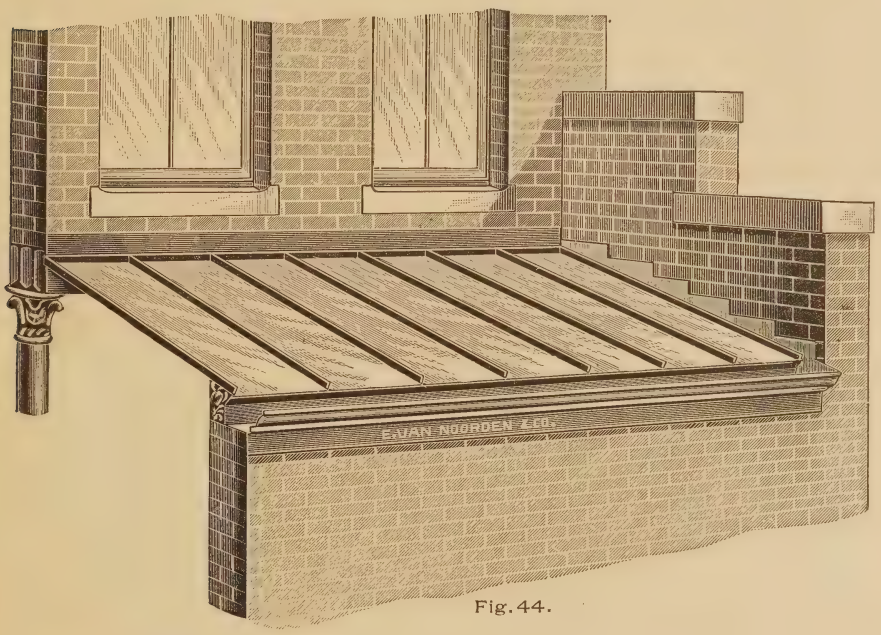


Fig. 44.

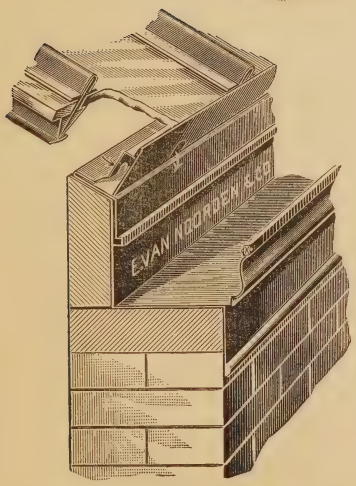


Fig. 45.

To receive the bottom of skylight, the wall should be covered by plank 2 inches thick, laid flat, with another plank set edgeways, flush with inside of wall. The two planks form seat for gutter, and support bottom of skylight. (See cut 45.) It is usually advisable to erect a wire guard over these forms of lights to prevent breakage of glass by falling icicles. We do this kind of work at low figures.

Figure 47 illustrates an Extension Light, as before described, with glazed sash under gutter. These sashes are operated, as before described, with our self-locking apparatus. The upright framework may be of wood, covered with metal, or entirely of metal.

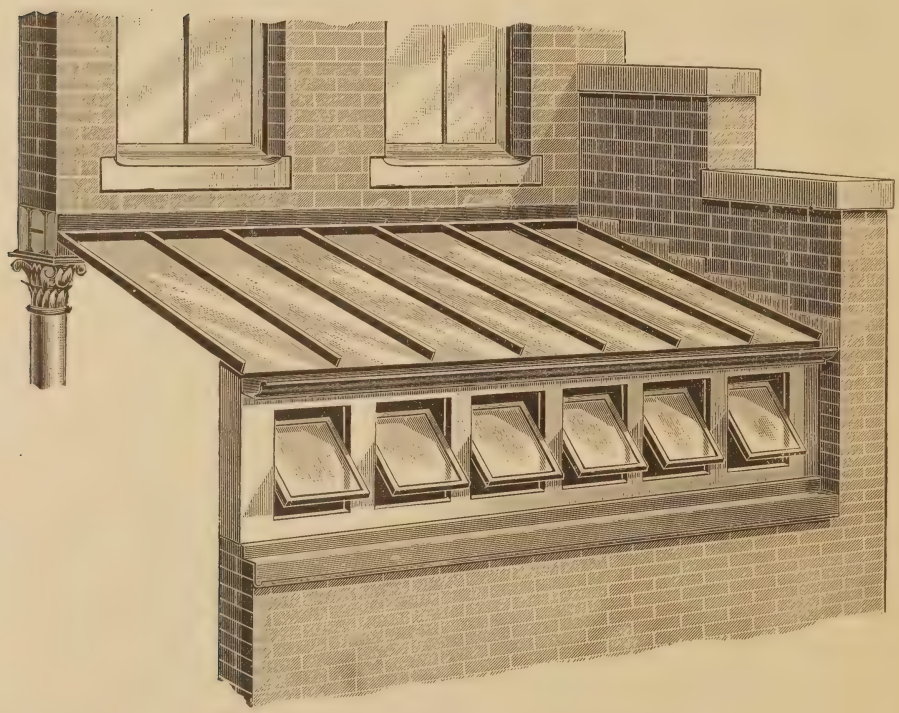


Fig. 47.

Figure 49 illustrates our Photographers' Skylight. This is only one form of light, there being many different forms required to adapt to the various styles of buildings. Special designs will be made on application.

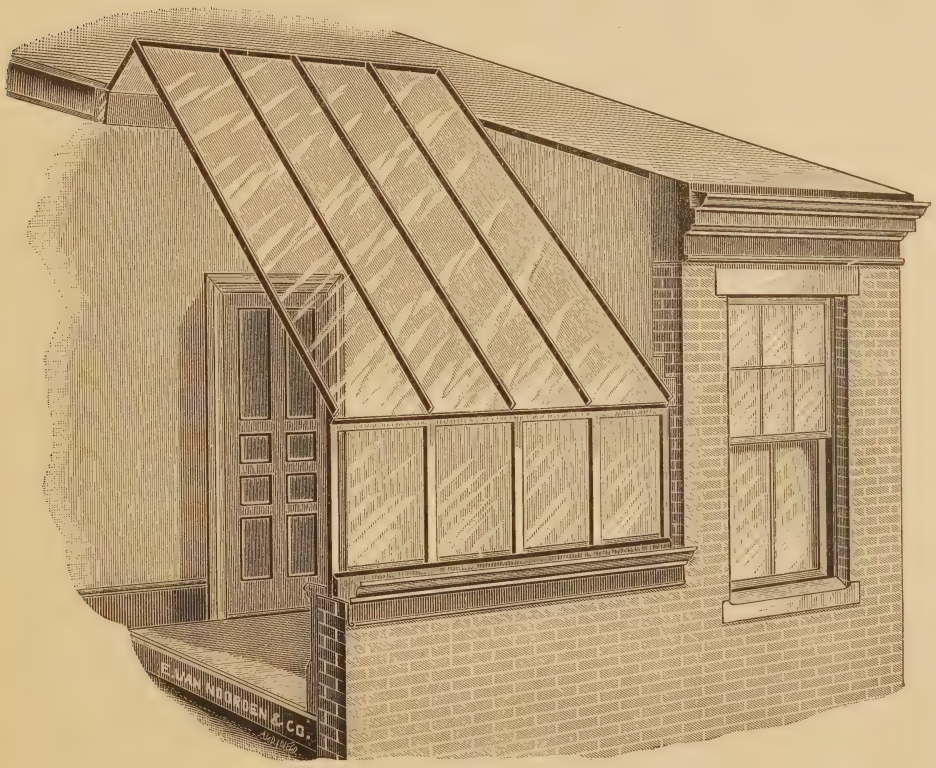


Fig. 49.

Figure 50 illustrates a skylight as applied at the bottom of a light shaft or area. It is perfectly storm-proof, and is arranged to carry off all rain water, etc., by means of the central gutter provided, and is securely flashed to walls and strongly supported and trussed where necessary.

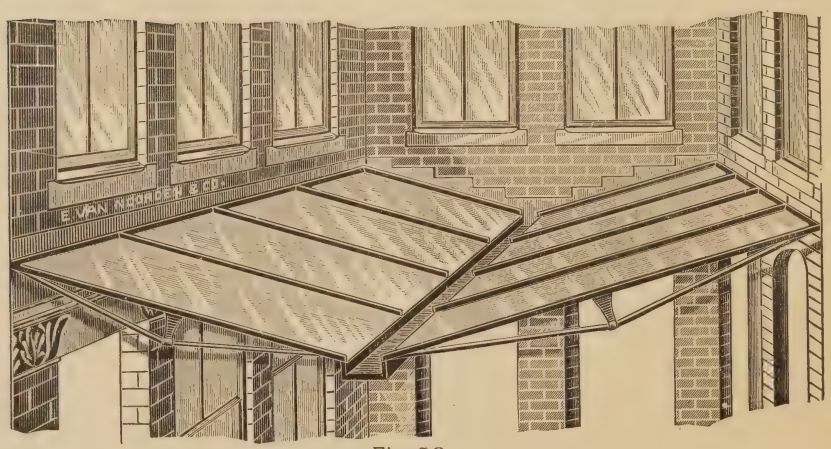


Fig. 50.

Figure 51 illustrates a Terraced Skylight, which allows the water to escape from under side of upper skylight to outside of lower skylight, which is more clearly shown in section drawing number 52. By means of this construction, skylights of any span can be made, with no more liability of leakage than skylights of smaller span.

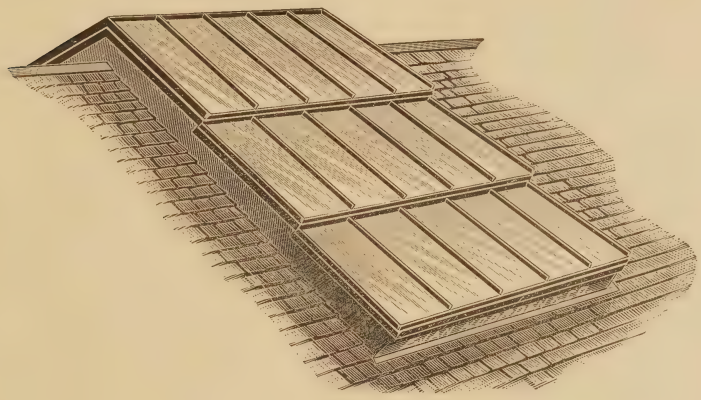


Fig. 51.

Figure 52 shows a section of Terraced Skylight with means of egress for condensation. The T bar A can be trussed if necessary.

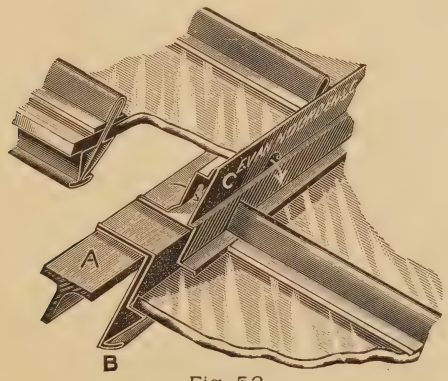


Fig. 52.

CLOVER LEAF VENTILATOR.

Made of galvanized iron and copper.

In designing this ventilator the aim has been to create a suction or strong upward draft, when acted upon by the wind at any angle, and at the same time secure a perfectly storm-proof device.

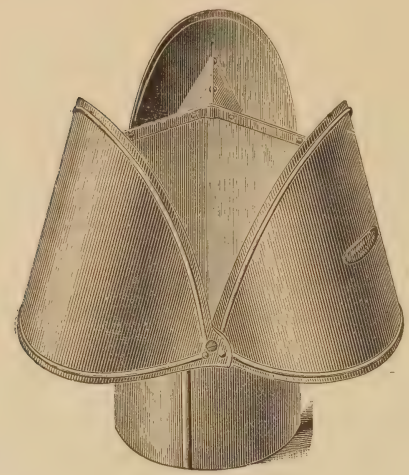


Fig. 53.

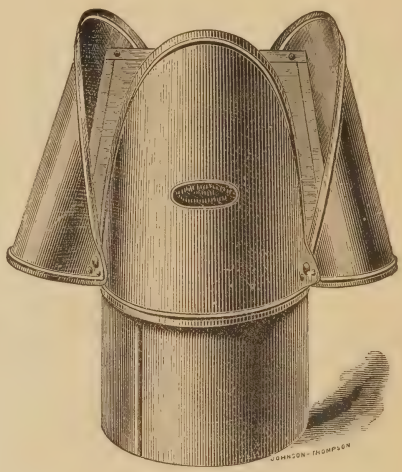


Fig. 54.

Figures 53 and 54 show two views of this ventilator. It consists of a straight shaft, three outside shields or clover leafs, and a three-gabled roof, one gable to each shield.

PRICE LIST.

Head or Top only, Figures 53 and 54. Galvanized Iron.

2 inch . . . $1 00	5½ inch . . $2 85	18 inch . . $27 00
2½ " . . . 1 00	6 " . . 3 40	20 " . . 33 00
2¾ " . . . 1 00	7 " . . 4 00	24 " . . 40 00
3 " . . . 1 50	8 " . . 4 65	30 " . . 65 00
3½ " . . . 1 50	10 " . . 5 75	36 " . . 90 00
4 " . . . 1 75	12 " . . 6 75	40 " . . 120 00
4½ " . . . 2 00	14 " . . 13 00	48 " . . 150 00
5 " . . . 2 50	16 " . . 20 00	60 " . . 225 00

☞ If base is required, it is charged extra. See other Price List.

Figures 55 and 56 show the relative position of the parts more clearly. D, F, G and L, K, H are two leaves, the third (not shown) extending from G to H. A, B, C, E is the three-gabled roof, with its gables projecting outward, nearly meeting the leaves. By this construction the device is rendered storm-proof. The shaft is well covered by the overhanging three-gabled roof, whose bottom supports are below and outside of mouth of shaft, as shown by G and H. The open gables are protected by the clover leaves, which are distant enough to allow the escape of foul air in the shaft. The ventilator is very sensitive to the least air stirring, thereby creating an upward draft.

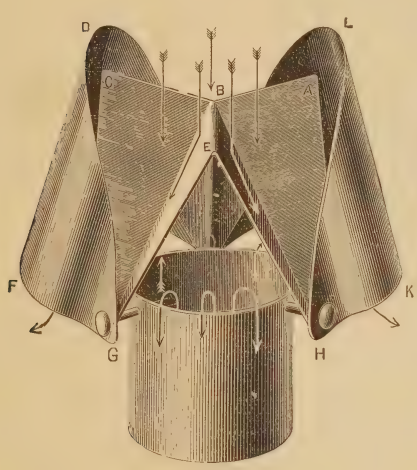


Fig. 55.

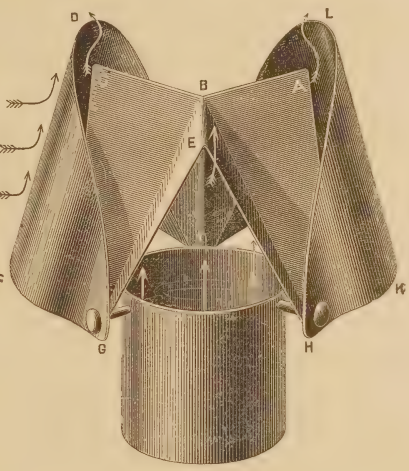


Fig. 56.

Referring to figure 55, the arrows at top indicate the course of a downward wind striking the three-gabled roof. It is slanted off outwardly, creating a vacuum in the shaft and drawing up the foul air from the interior, which finds an exit at the base of the leaves, as at F, G, H and K, as shown by the curved arrows at bottom.

In figure 56 the action is shown of wind striking the ventilator horizontally, as indicated by the arrows, the current being slanted up and drawing the foul air up with it, exhausting it at the top through spaces between the leaves and the three gabled roof. The arrows at D and L indicate the foul air.

VAN NOORDEN VENTILATOR.

Van Noorden's Ventilator, though simple in appearance, is undoubtedly the most effective in use of this type. It is an improvement upon what is known as the "Emerson Ventilator," and consists of the shaft and flaring flange, as in the "Emerson"; but instead of supporting a flat disc over the top of shaft, an inverted cone is supported, with its vertex pointing down into the shaft, and quite near the surface of same. When the wind blows, it enters the flaring opening presented on all sides by means of the inverted cone above and the flaring flange

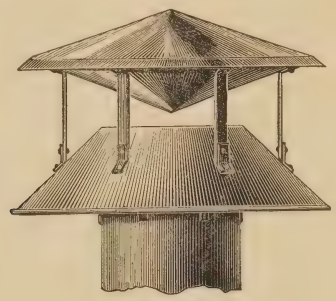


Fig. 57.

beneath, and, blowing towards the centre of the shaft, increases in force as the passage becomes narrower. The downward slope of the inverted cone presses the air close to the surface of the shaft, so that, by its tendency to produce a vacuum, it catches the air in the shaft, and draws it swiftly out, creating a strong draft, much more powerful than is produced by other ventilators. Thus, by reason of its peculiar construction, it intercepts and concentrates all external air currents, creating a powerful up draft. A down current of air produces an up draft.

PRICE LIST.

Head or Top only, Figure 57. Galvanized Iron.

2 inch . . . $1 00	6 inch . . . $3 40	22 inch . . $35 00
2½ " . . . 1 00	7 " . . . 4 00	24 " . . 40 00
2¾ " . . . 1 00	8 " . . . 4 65	28 " . . 52 00
3 " . . . 1 50	10 " . . . 6 50	30 " . . 60 00
3½ " . . . 1 50	12 " . . . 8 50	36 " . . 84 00
4 " . . . 1 75	14 " . . . 13 00	40 " . . 110 00
4½ " . . . 2 00	16 " . . . 20 00	42 " . . 125 00
5 " . . . 2 50	18 " . . . 25 00	48 " . . 180 00
5½ " . . . 2 85	20 " . . . 30 00	

VENTILATOR WITH BASE AND DAMPER.

Van Noorden or Clover Leaf Patterns.

Figures 58 and 59. Galvanized Iron.

Diameter of Pipe. Inches.	Price.	Additional Pipe per Foot.	Height of Shaft G to B, Fig. 44. Inches.
6	—	$0 51	—
7	—	53	—
8	$7 80	61	15 1/3
10	10 50	70	18 2/3
12	13 25	88	22
14	18 00	1 05	24 1/6
16	24 00	1 42	27 1/3
18	29 25	1 60	30 1/2
20	35 50	1 80	33 2/3
22	43 00	2 00	36 5/6
24	49 00	2 20	38 1/2
28	58 00	2 60	44
30	63 00	2 80	47
36	87 00	4 20	56
40	112 00	4 65	62
42	130 00	4 90	65
48	200 00	5 20	74

Figures 58 and 60 show respectively elevations and sectional view of Van Noorden Ventilators arranged with base and damper, ready to attach to the roof. E is a valve or damper, worked by means of cord,

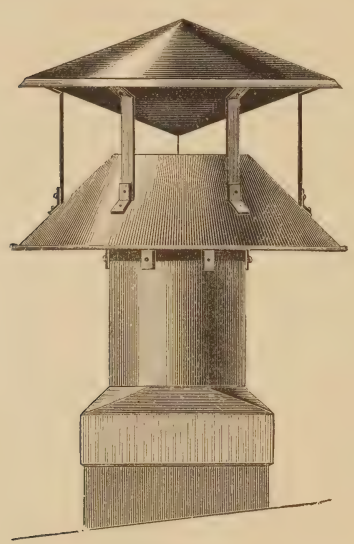


Fig. 58.

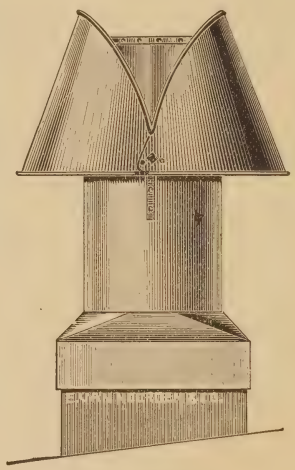


Fig. 59.

F, and weight D, attached thereto. H H is the wooden curb built in the roof, to which the ventilator is attached, the sheet metal flange being slipped over same and screwed to wood. The four band-iron braces, G G, are nailed or screwed to inside of curb.

Figure 61 shows the wooden curb built on roof, to which the ventilator, with base is attached. The curb is usually built of 2-inch plank, 6 or 8 inches high, level on top. It should be first tinned, same as a

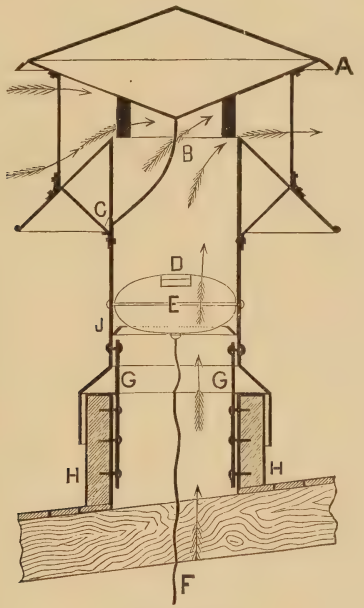


Fig. 60.

scuttle or skylight curb, after which the ventilator is slipped over, the sheet metal flange (figures 58, 59 and 60) being screwed to the wood, and the ventilator stayed by means of the four bands or braces G G, figure 60.

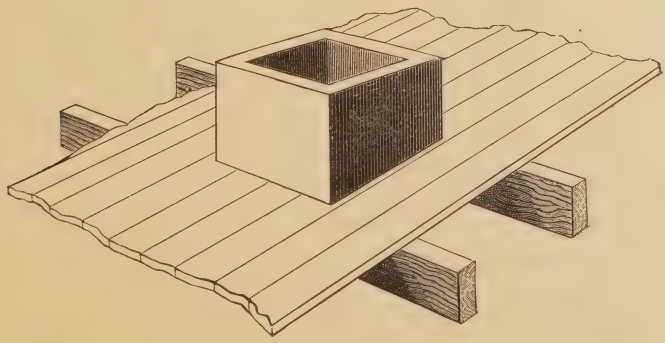


Fig. 61.

Figures 62 and 63 show the ventilators adapted for use as chimney caps, having base attached ready for setting on chimney.

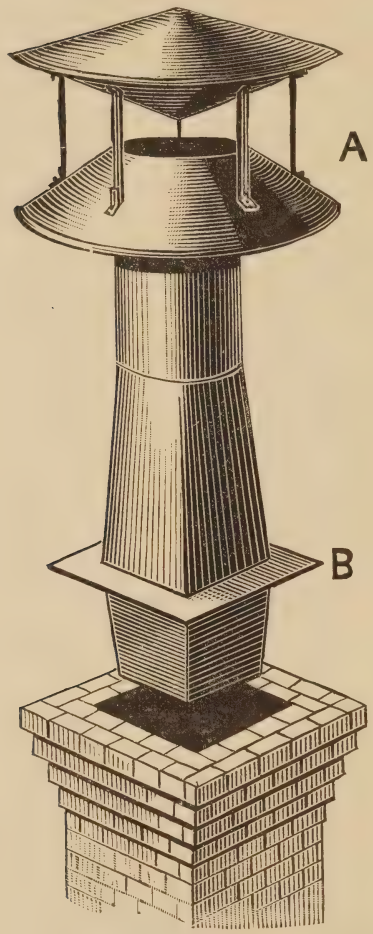


Fig. 62.

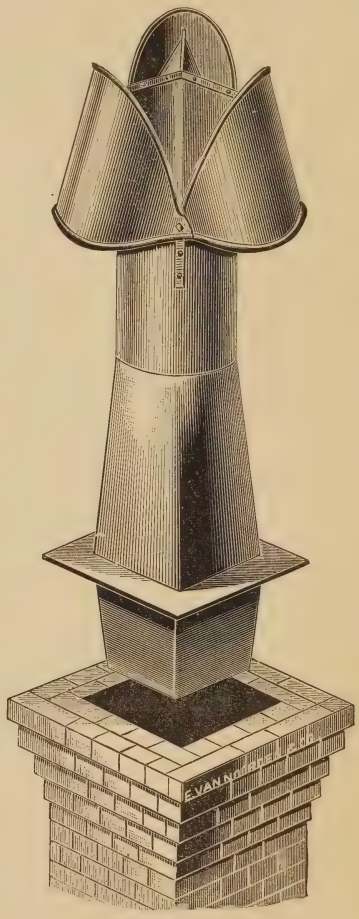


Fig. 63.

These chimney tops are effectual for remedying poor draft in chimneys; and owing to the construction of both ventilators, which makes them sensitive to the slightest current of air stirring, their value as draft increasers will be readily seen.

When ordering, give measure of flue inside at top. The height from A to B is 4 feet.

CHIMNEY CAPS.

Van Noorden or Clover Leaf Patterns.

Figures 62 and 63. Galvanized Iron.

Size of Flue Inside. Inches.	Diameter Ventilator Inches.	Price.	Additional Pipe, per Foot.
8 x 8	6	$9 00	$0 51
8 x 8	7	9 70	53
8 x 8	8	10 70	61
8 x 12	8	11 60	61
8 x 12	10	14 00	70
12 x 12	10	15 25	70
12 x 12	12	18 10	88
12 x 16	12	20 70	88
12 x 16	14	22 00	1 05
12 x 16	16	26 90	1 42
16 x 16	16	28 70	1 42
16 x 20	16	30 60	1 42
20 x 20	18	36 50	1 60
20 x 20	20	40 50	1 80

These prices include 4 feet of pipe.

VENTILATORS WITH ELBOWS, FLANGES, AND DAMPERS.

Van Noorden or Clover Leaf Patterns.

Figure 64. Galvanized Iron.

Diameter Pipe. Inches.	Price.	Additional Pipe, per Foot.	Height of Shaft. Inches.
6	$5 40	$0 51	12
7	6 70	53	12
8	8 00	61	12
10	11 80	70	12
12	15 60	88	12
14	20 00	1 05	14
16	27 00	1 42	15
18	33 50	1 60	15
20	41 50	1 80	18
22	48 80	2 00	18
24	56 70	2 20	20
28	68 30	2 60	24
30	76 50	2 80	24
36	110 00	4 20	28
40	130 00	4 65	32
42	160 00	4 90	34
48	230 00	5 20	36

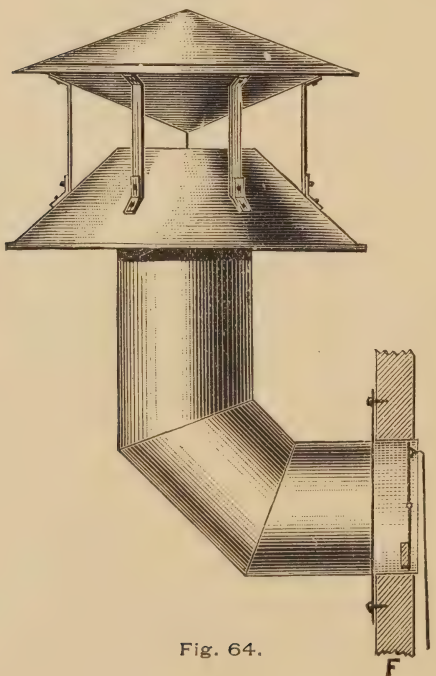


Fig. 64.

Figure 64 represents the Van Noorden Ventilator with elbow and flange to attach to the ends of skylights. The Clover Leaf Ventilator is arranged also in this way; the damper is shown with cord for opening, and is weighted at the bottom so as to be self-closing, when the cord is released.

FINIALS.

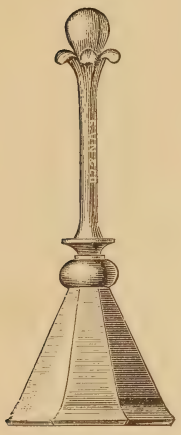


Fig. 89.

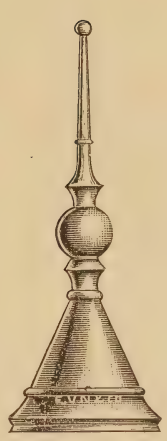


Fig. 90.

Fig. 91.

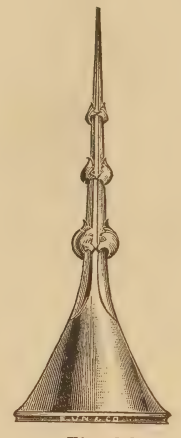


Fig. 92.

Fig. 93.

Fig. 94.

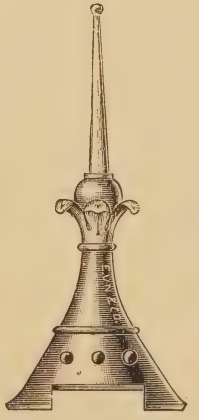


Fig. 95.

Fig. 96.

Fig. 97.

Fig. 98.

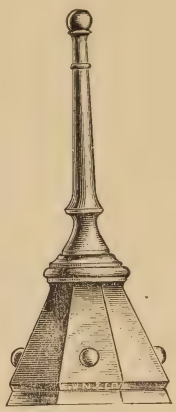


Fig. 99.

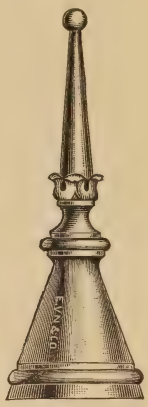


Fig. 100.

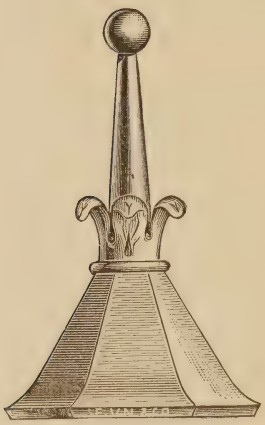


Fig. 101.

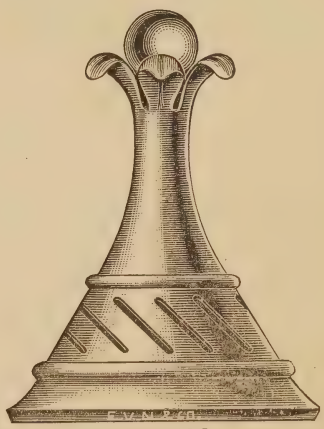


Fig. 102.

Special designs will be furnished should these not be suitable. State size required, pitch of roof, whether base is to be round, square, or octagonal, and the material to be used. Prices on application.

GUTTERS.

The cut illustrates the style of eave gutters most in use in Boston and vicinity. In ordering, state at which point measures are taken for lengths, whether on lead line or at back of gutter. When there are mitres this is necessary. Also give seat and back measure; A to B

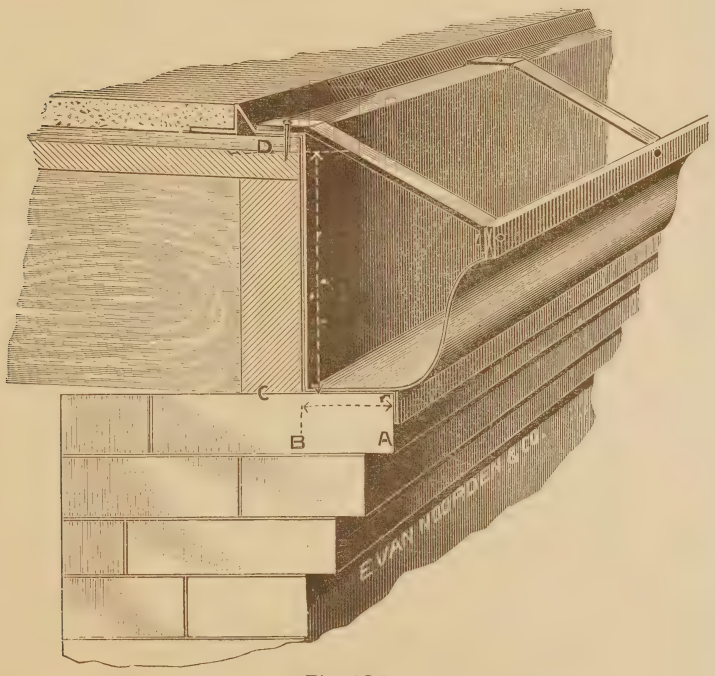


Fig. 103.

is seat, C to D is back, A is lead line. Also state if roof is flat, to be covered with tar and gravel, or steep, for slate or shingle covering. A sketch like the cut, with figures marked in proper places, may save time and avoid mistakes.

EAVE TROUGH.

MADE IN EIGHT-FOOT LENGTHS.

Fig. 104.

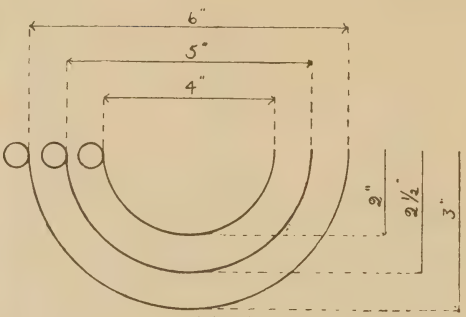


Fig. 105.

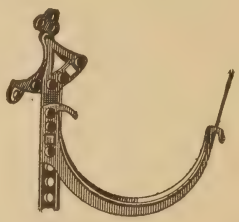


Fig. 107.

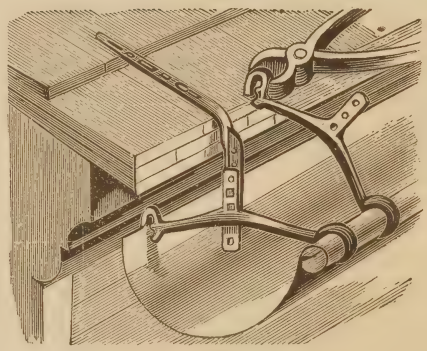


Fig. 106.

Fig. 108.

Fig. 104 shows length of trough.

Fig. 105, sections of three standard sizes.

Fig. 106 shows trough as applied to eave.

Fig. 107, hanger which can be adjusted to any pitch and attached to cornice moulding.

Fig. 108, part of hanger shown in Fig. 106, by which gutter is suspended from roof.

When writing for prices state quantity required, number of mitres, and whether mitres are ordinary or reverse.

REFERENCES.

The following is a partial list of parties using our goods, to whom we are pleased to refer.

MILLS AND FACTORIES.

Great Northern Paper Co., Millinocket, Me.
Great Northern Paper Co., Madison, Me.
International Paper Co., on Various Mills.
Champion Paper Co., E. Pepperell, Mass.
Nashua River Paper Co., East Pepperell, Mass.
G. W. Wheelwright, Paper Co., Wheelwright, Mass.
Cumberland and Presumpscot Mills, Cumberland Mills, Me.
Pairpoint Manufacturing Co., New Bedford, Mass.
Champion Coated Paper Co. Hamilton, O.
Franklin Paper Co., Holyoke, Mass.
Sugar River Paper Co., Claremont, N. H.
Merrimac Paper Co. Lawrence, Mass.
Nekonegan Paper Mills, Old Town, Me.
Ticonderoga Pulp & Paper Co., Ticonderoga, N. Y.
Nashua Card & Glazed Paper Co., Nashua, N. H.
Richmond Paper Co., Providence, R. I.
General Electric Co., Lynn, Mass.
Washington Mills, Lawrence, Mass.
Windsor Company, N. Adams, Mass.
Arnold Print Works, N. Adams, Mass.
Wanskuck Mills, Providence, R. I.
Pocasset Mfg. Co., Fall River, Mass.
Naumkeag Steam Cotton Co., Salem, Mass.
S. H. Greene & Sons Corporation, Riverpoint, R. I.
Brainerd Milling Machinery Co., Hyde Park, Mass.
Ludlow Mills, Ludlow, Mass.
Hopedale Mills, Hopedale, Mass.
M. J. Worthley, Lynn, Mass.
Copsecook Mills, Gardiner, Me.
Sullivan Machinery Co. Claremont, N.H
Duncan Co., Mechanicsville, N. Y.
Standard Silk Co., Phillipsburg, N. J.
Dana Warp Mills, Westbrook, Me.
U. S. Cotton Co., Pawtucket, R. I.
Lewiston Bleachery & Dye Works, Lewiston, Me.
D. E. Whiton Machine Co., New London, Ct.
Rodman Mfg. Co., Wickford Junc. R. I.
Union Oil Co., Providence, R. I.
Brainerd & Armstrong Co., New London, Ct.
Falls Rivet and Machine Co., Cuyahoga Falls, O.
Glenside Woolen Mills, Skaneateles Falls, N. Y.
Ginn & Co., East Cambridge Mass.
Potter & Johnson Co., Pawtucket, R.I.
Plume & Atwood Mfg. Co., Thomaston, Ct.
Pauly Jail Building and Manufg. Co. St. Louis, Mo.
Charlottsville Woolen Mills, Charlottsville, Va.

Fulton Bag and Paper Co., Atlanta, Ga.
Schuyler Electric Co., Middletown, Ct.
Pope Manufacturing Co., Hartford, Ct.
Southern Cotton Oil Co., Savannah, Ga.
American Curled Hair Co., Pawtucket, R. I.
Howe Scale Company, Rutland, Vt.
Columbia Mfg. Co., Greenville, N. H.
Valley Worsted Mills, Providence, R. I.
E. Jenckes Mfg. Co., Westfield, Mass.
Davis Shoe Company, Lynn, Mass.
Reversible Collar Co., Cambridge, Mass.
Russia Cement Co. Gloucester, Mass.
Chapman Valve Co., Indian Orchard, Mass.
Nonotuck Silk Co., Leeds, Mass.
U. S. Bunting Co., Lowell, Mass.
Calumet Woollen Co., Uxbridge, Mass.
Goss Marine Iron Works, Bath, Me.
American Optical Co., Southbridge, Mass.
Lexington & Boston R'way Co., Power House, N. Lexington, Mass.
Zylonite Comb & Brush Co., Adams, Mass.

PUBLIC BUILDINGS.

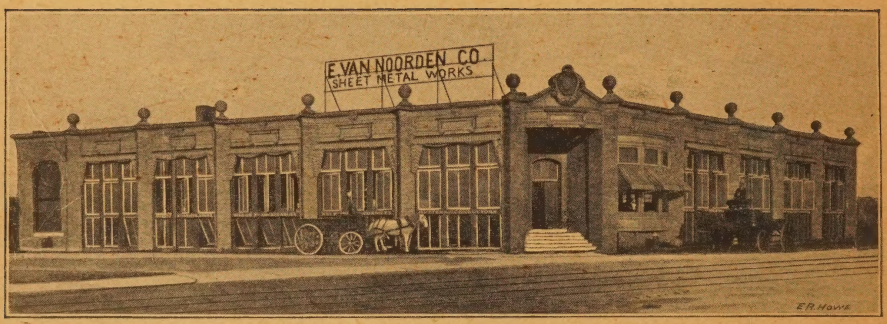
Mass. General Hospital, Boston, Mass.
City Hospital, Boston, Mass.
Mass. Institute of Technology, Boston.
New Public Library, Boston, Mass.
Harvard University, Cambridge, Mass.
Registry of Deeds, E. Cambridge, Mass.
City Hall, Haverhill, Mass.
Opera House, Haverhill, Mass.
Public Library, Hyde Park, Mass.
Public Library, Lynn, Mass.
Longwood School, Brookline, Mass.
Phillips Academy, Exeter, N. H.
School House, Montpelier, Vt.
Music Hall, Quincy, Mass.
Watertown Arsenal, Watertown, Mass.
Tufts College, Somerville, Mass.
St. Vincent de Paul Church, S. Boston.
Hudson River State Hospital, Poughkeepsie, N. Y.
Austin & Pierce Farm Bldgs., Boston.
Public Bath House, Brookline, Mass.
Harvard Boat House, Cambridge, Mass.
St. Thomas Church, Jamaica Plain, "
Catholic Church, Canton, Mass.
Masonic Hall, Haverhill, Mass.
Odd Fellows Block, Lowell, Mass.
City Hospital, Charleston, S. C.
Maine State College, Orono, Me.
Nevins Memorial Bldg., Methuen, Mass.
Wheaton Seminary, Norton, Mass.
Lyman Whipple Congregational Church Woodstock, Vt.
University of Vermont, Burlington, Vt
Insane Asylumn, Concord, N. H.
City Hall, Fall River, Mass.

BANKS.

First National Bank, Chelsea, Mass.
Fall River Natl. Bank, Fall River, Mass.
Metacomet Natl. Bank, Fall River, Mass.
Massasoit Natl. Bank, Fall River, Mass.
First National Bank, Haverhill, Mass.

MISCELLANEOUS.

Jordan, Marsh & Co., Boston, Mass.
A. Shuman & Co., Boston, Mass.
Boston Gas Light Co , Boston, Mass.
Armstrong Transfer Co., (Stable) Boston, Mass.
Chelmsford Foundry Co., Boston, Mass.
Taunton Trust Co., Taunton, Mass.
Massachusetts R. E. Co., Taunton, Mass.
Country Club, Brookline, Mass.
Weeks & Potter, Boston, Mass.
Carter, Rice & Co., Boston, Mass.
Winslow Bros., Norwood, Mass.
L. J. French, Hyde Park, Mass.
Boston Athletic Ass'n, Boston, Mass.
Central Vermont R.R. Ogdensburg, N.Y.
Edison Electric Illuminating Co., Boston, Mass.



DANIELS PRINTING CO., 41 ESSEX ST., BOSTON.